

AMENDMENTS TO THE CLAIMS

1 – 28 (Cancelled).

29. (New) A method of controlling the transmit power of a plurality of CDMA downlink channels from a base station to a plurality of mobile stations within a control range between a nominal lower limit and a nominal upper limit, said method comprising:

receiving at the base station a request from one of the mobile stations to decrease the transmit power of a downlink channel from the base station to the one of the mobile stations;

determining whether a hypothetically decremented value of the transmit power is higher or lower than the nominal lower limit;

when the hypothetically decremented value is equal to or higher than the nominal lower limit, decreasing the transmit power;

when the hypothetically decrement value is lower than the nominal lower limit, decreasing the transmit power if the downlink channel has a quality equal to or higher than a specified value; and

when the hypothetically decremented value is lower than the nominal lower limit, setting the transmit power to the nominal lower limit if the downlink channel has a quality lower than the specified value.

30. (New) The method of claim 29, further comprising:

receiving, at the base station, a command signal from the one of the mobile stations requesting the base station to increase the transmit power of the downlink channel;

determining whether a hypothetically incremented value of the transmit power of the downlink channel is higher or lower than the nominal upper limit;

increasing the transmit power of the downlink channel if the hypothetically incremented value of the transmit power of the downlink channel is equal to or lower than the nominal upper limit;

if the hypothetically incremented value of the transmit power is higher than the nominal upper limit, determining whether the total transmit power of all the downlink channels is higher or lower than a specified threshold value;

increasing the transmit power of the downlink channel if the total transmit power of all the downlink channels is equal to or lower than the specified threshold value even when the hypothetically incremented value of the transmit power of the downlink channel is greater than the nominal upper limit; and

setting the transmit power of the downlink channel equal to the nominal upper limit if the hypothetically incremented value of the transmit power of the downlink channel is greater than the nominal upper limit and the total transmit power of all the downlink channels is equal to or higher than the specified threshold value.

31. (New) The method of claim 29, further comprising:

receiving, at the base station, a quality-indicating signal from the mobile

station indicating the quality of the downlink channel; and

determining whether the quality of the downlink channel, as indicated by the quality-indicating signal, is higher or lower than the specified value.

32. (New) The method of claim 31, wherein the quality indicating-signal represents a signal-to-interference ratio of the downlink channel at the mobile station.

33. (New) The method of claim 29, wherein when the hypothetically decremented value is higher than the lower limit, the transmit power is decreased by a stepsize value which varies depending on the length of time during which the transmit power has been lower than a predetermined level.

34. (New) The method of claim 33, further comprising:

incrementing a count value if the power level is lower than the predetermined level; and

increasing the stepsize value when the count value reaches a predetermined value.

35. (New) The method of claim 29, wherein when the hypothetically decremented value is lower than the nominal lower limit and the downlink channel has a quality higher than the specified value, the transmit power is decreased by a stepsize value which varies depending on the length of time during which the transmit

power has been lower than a predetermined level.

36. (New) The method of claim 35, further comprising:

incrementing a count value if the power level is lower than the predetermined level; and

increasing the stepsize value when the count value reaches a predetermined value.

37. (New) The method of claim 29, wherein setting the transmit power to the nominal lower limit comprises:

incrementing a count value as long as the hypothetically decremented value is lower than the nominal lower limit;

setting the transmit power to the nominal lower limit if the count value is smaller than a predetermined count value; and

decreasing the transmit power if the count value reaches the predetermined count value.

38. (New) A CDMA communication system comprising:

a plurality of mobile stations; and

a base station for establishing a plurality of downlink channels to said mobile stations; receiving a power command signal from one of said mobile stations requesting said base station to decrease the transmit power of a downlink channel to

the one of the mobile stations; detecting whether a hypothetically decremented value of the transmit power is higher or lower than a nominal lower limit of a power control range; if the hypothetically decremented value is equal to or higher than the nominal lower limit, decreasing the transmit power of the downlink channel; if the hypothetically decremented value is lower than the nominal lower limit, decreasing the transmit power of the downlink channel if the downlink channel has a quality equal to or higher than a specified value; and if the hypothetically decremented value is lower than the nominal lower limit, setting the transmit power to the nominal lower limit if the quality of the downlink channel is lower than the specified value.

39. (New) The CDMA communication system of claim 38, wherein said base station is arranged to:

receive a command signal from said one of said mobile stations requesting said base station to increase the transmit power of the downlink channel;

determine whether a hypothetically incremented value of the transmit power is higher or lower than a nominal upper limit of the power control range;

increase the transmit power of the downlink channel if the hypothetically incremented value of the transmit power is equal to or lower than the nominal upper limit;

if the hypothetically incremented value of the transmit power of the downlink channel is higher than the nominal upper limit, determine whether the total transmit power of all the downlink channels is higher or lower than a specified threshold value;

increase the transmit power of the downlink channel if total transmit power of all the downlink channels is equal to or lower than the specified threshold value even when the hypothetically incremented value is greater than the nominal upper limit; and

set the transmit power of the downlink channel equal to the nominal upper limit if the hypothetically incremented value is greater than the nominal upper limit and the total transmit power of all the downlink channels is equal to or higher than the specified threshold value.

40. (New) The CDMA communication system of claim 38, wherein said base station is arranged to:

receive a quality-indicating signal from said one of said mobile stations indicating the quality of the downlink channel at said one of said mobile stations;

determine whether the quality of the downlink channel indicated by the quality-indicating signal is higher than the specified value; and

decrease the transmit power if the quality is higher than the specified value.

41. (New) The CDMA communication system of claim 40, wherein the quality-indicating signal represents a signal-to-interference ratio of the downlink channel at said mobile station.

42. (New) The CDMA communication system of claim 40, wherein said base

station is arranged to decrement the transmit power by a stepsize value which varies depending on the length of time during which the transmit power has been lower than a predetermined value.

43. (New) The CDMA communication system of claim 42, wherein said base station is arranged to increment a count value if the transmit power is lower than a predetermined level and increase the stepsize value when the count value reaches a predetermined value.

44. (New) The CDMA communication system of claim 40, wherein said base station is arranged to:

increment a count value if the hypothetically decremented value is lower than the nominal lower limit;

set the transmit power of the downlink channel to the nominal lower limit if the count value is smaller than a predetermined count value, and

decrease the transmit power if the count value reaches the predetermined count value.